

KRAMEROVA,Z.; VOJTA,V.; CERNY,M.; SEKLA,B.; SOUKUP,F.

Congenital cerebellar hypoplasia with congenital heart defect and autosomal trisomy in monozygotic twins. Cesk. pediat. 18 no.12:1096-1100 D'63.

1. IV. detska klinika fakulty vseobecneho lekarstvi KU v Praze (prednosta: prof. dr. F.Blazek); Neurologicka klinika fakulty vseobecneho lekarstvi KU v Praze (prednosta: akademik K.Henner) a Biologicky ustav fakulty vseobecneho lekarstvi KU z Praze (prednosta: prof.dr. B.Sekla).

\*

CERNA, M.; CERNY, M.; BARVIC, M.; SEKLA, B.

Dermatoglyphic examination of children with Down's disease in the ascending line. Acta univ. Carol. [med] (Praha): Suppl. 18: 193-198 '64.

1. Ustav obecné biologie fakulty všeobecného lékařství University Karlovy v Praze (prednosta: prof. dr. B. Sekla) a  
I. detská klinika fakulty detského lékařství University Karlovy v Praze (prednosta: prof. dr. J. Svejcar).

WAGNER, V.; HAN KIVA, A.; MLY, V.; MOLLEROVA, M.; SEKLA, B.

Reaction to Brucella abortus in rats resistant and susceptible  
to tumor necrosis. Neoplasma (Bratisl.) 12 no.1:35-43 '65

1. Public Health Laboratory, Prague; Physiological Institute,  
Czechoslovak Academy of Sciences, Prague; Institute of Health  
Service Organization, Charles University, Prague; Department  
of Microbiology, Hospital Bulovka, Prague; Department of General  
Biology, Charles University, Prague, Czechoslovakia.

SEKLA, B., prof. dr.

The present status of clinical genetics and perspectives of  
its development. Acta univ. Carol. [med] (Praha): Suppl. 18:  
83-89 '64.

1. Ustav obecné biologie fakulty všeobecného lékařství University  
Karlovy v Praze (prednosta: prof. dr. B. Sekla)

CZECHOSLOVAKIA

SEMLA, B., Prof. Dr.

Biological Institute of the Faculty of General Medicine  
of Charles University (Biologicky ustav fakulty vse-  
obecneho lekarstvi KU), Prague

Prague, Vnitřní Lekarství, No 8, 1964, pp 740-744

"Fundamentals of Clinical Genetics and Future Trends."

SEDLACEK, B.

Sedlacek, B. "Light scattering; the determination of molecular weights and the size shape, and interaction of particles. Pt. 2. P. 908 CASOPIS PRO PESTOVANI MATEMATIKY. CZECHOSLOVAK MATHEMATICAL JOURNAL. Vol. 47 No. 6 June 1953 Praha, Czechoslovakia.

SO: MONTHLY LIST OF EAST EUROPEAN ACCESSIONS, L. C. Vol. 3 No. 1 Jan. '54 Uncl.

SEKLACEK BOHUSLAV

CZECHOSLOVAKIA/Chemical Technology - Chemical Products and Their I-10  
Application. Fats and Oils. Waxes. Soap. Detergents.  
Flotation Reagents.

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 2712

Author : Seklacek Bohuslav, Rybin Rudolf

Inst : -

Title : Determination of Oxidation-Induced Changes in Animal Fats  
by the Colorimetric Method Using 2-Thiobarbituric Acid.

Orig Pub : Prumysl potraviny, 1957, 8, No 1, 44-45

Abstract : A colorimetric method is proposed, in which 2-thiobarbituric acid is utilized, for the evaluation of the degree of freshness of fats. 5 g of fat are weighed out with an accuracy within 0.01 g and placed in a 500 ml flask into which are added 100 ml water and 5 ml 3N HCl. The flask is attached, by means of a ground glass joint, to a Liebig condenser and distillation is carried out. For the analysis are taken the first 25 ml of the distillate, which

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After cooling, 0.4 ml of 3N HCl are added, and the solution is diluted with water to a volume of 100 ml. Solution B is concentrated (85%) phosphoric acid.

APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R001547710014-1"

Card 2/2

SEKLAK, J

"Mechanization of potato cultivation." (p. 384). ZA SOCIALISTICKE ZEMEDELSTVI (Ministerstvo zemedelskychved) Praha, Vol 4, No 8, Apr 1954

SO: East European Accessions List, Vol 2, No 8, Aug 1954.



SEKNEDIN, I. D.

Valves

To conserve materials. Sakh.prom. 27, No. 3, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. UNCLASSIFIED.

SEBASTIA, O.

One-hundred years of Slovak poetry. p. 1579.

LOOKING. ( EN Kirjanike Liit) Tallin. Estonia.  
No. 10, Oct. 1959.

Monthly List of East European Accessions (EPAI) LC, Vol. 8, no. 12, Dec. 1959.

Uncl.

SEKOVANOV, B. (Yaroslavl')

Reflex receiver set using three triodes. Radio no. 5:44-45 My '60.  
(MIRA 13:12)

(Radio--Receivers and reception)

SEKOWICZOWA, H.

"Notes on the Middle Triassic in the neighborhood of Radoszyce." p. 347

KWARTALNIK GEOLOGICZNY, (Instytut Geologiczny) Warszawa, Poland. Vol. 2, no. 2, 1958

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 6, June 1959  
Uncl.

SEKOWSKA, B.

Distr: 4E2c(j),

7 7 7  
 Determination of succinic, maleic, and fumaric acid in  
 their mixture. Z. Helen and B. Sekowska. *Przemysly*  
*Chem.* 11, 523-5 (1955).--Det. the ~~three~~ acids poten-  
 tiometrically by titrating their Na salts with HClO<sub>4</sub> in an  
 AcOH soln, by using a glass and calomel electrode. Then  
 det. the maleic (I) and fumaric (II) acids polarographically  
 by using N NH<sub>4</sub>Cl adjusted with NH<sub>3</sub> to pH 8.2 as a buffer.  
 The half-wave potential is 1.42 v. for I and 1.62 v. for II,  
 with a  $\frac{1}{2}$  drop rate of 2.5 mg./sec. In case II is absent, or  
 the sum of I and II has to be detd., the amt. of all acids is  
 detd. potentiometrically, and I and II are detd. with  
 KMnO<sub>4</sub>.  
 L. G. Martin

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 2 MAY

SEKOWSKA, B.

5  
4E2d  
4E4j

130. Simultaneous determination of diethyl esters of mesocephylmalonic and diethylmalonic acids in commercial diethyl-diethylmalonate. Z. Bellen and B. Sekowska (Anal. Dept., Inst. of General Chem., Warsaw). *Chem. Anal., Warsaw*, 1957, 8 (1), 35-43.—The method depends on the different rates of hydrolysis of diethyl malonate (I), diethyl monocephylmalonate (II) and diethyl diethylmalonate (III) by alkali. I (in 1 g of III) is hydrolysed by shaking for 5 min. with a 25% aq. KOH soln. (5 ml) and the excess of KOH is determined by titration with 0.5 N HCl, with phenolphthalein indicator. I and II (in 1 g of III) are hydrolysed by shaking with N KOH soln. in n-butanol (10 ml) for 5 min. at room temp. and heating in a boiling-water bath for 2 min. The soln. is cooled; acetone (5 ml) is added and the pptd. potassium salts of the two acids are filtered off, washed with acetone-n-butanol (1:1), dried at 150°, and weighed. The total esters (in 1 g of III) are determined by hydrolysis with 0.5 N KOH.

SEKOWSKA, B.; BELLEN, Z.

Determination of aldehydes by the argentometric method. 1. Determination of formaldehyde in technical urotropine. p. 25.

CHAMIA ANALITYCZNA. (Komisja Analityczna Polskiej Akademii Nauk i Naczelna Organizacja Techniczna) Warszawa, Poland. Vol. 4, No. 1/2, 1959.

Monthly List of East European Accessions (EEAI) LC, Vol 8, August 1959.  
Uncl.

BELLEN, Zygmunt; SEKOWSKA, Barbara

Simultaneous determination of acetaldehyde and paraldehyde. Chem  
anal 6 no.1:69-74 '61. (EEAI 10:7)

1. Struszynski Analytical Laboratory, Institute of General Chemistry,  
Warsaw.

(Acetaldehyde) (Paraldehyde)



BELLEN, Zygmunt; SEKOWSKA, Barbara

Argentometric determination of acetaldehyde in the presence of  
acetone. Chem anal 6 no.2:201-206 '61. (EEAI 10:9)

1. Struszynski Analytical Department, Institute of General Chemistry,  
Warsaw.

(A etaldehyde) (Acetone) (Argentometry)

SEKOWSKA, Janina

Multilocular cyst of the kidney. Urol. polska no.11:131-136 1957.

1. Z Kliniki Urologicznej w Krakowie Kierownik: prof. dr S. Iaskownicki.  
(KIDNEYS, cysts  
multilocular cyst, case report (Pol))

SEKOWSKA, Janina

True hermaphroditism. Polski przegl. chir. 32 no.10:1029-1031 '60.

1. Z Kliniki Urologicznej A.M. w Krakowie Kierownik: prof. dr  
St. Laskownicki.

(HERMAPHRODITISM diag)

SEKOWSKA, Janina; GOLAJEWSKI, Andrezej

Primary cancer of a diverticulum of the female urethra. Polski  
przegl. chir. 33 no.11a:1470-1472 '61:

1. Z Kliniki Urologicznej AM w Krakowie Kierownik: prof. dr  
S.Laskownicki.

(URETHRA neopl)

(URETHRA dis)

SEKOWSKA, Z.

7  
5  
Simultaneous determination of diethyl esters of monoethylmalonic and diethylmalonic acids in commercial diethylmalonate. Z. Hellen and Z. Sekowska (Inst. Gen. Chem., Warsaw), Chem. Anal., 66-48 (1967) (English summary); cf. Gamus, C.A. 38, 1448; Gyenes, C.A. 48, 1896. — A method of detn. of di-Et esters of Et-CH(COOH) and Et-C(COOH)<sub>2</sub> in com. Et-C(COOEt)<sub>2</sub> (I) is described. It consists in hydrolysis of the sample by (a) 25% aq. soln. of KOH, (b) N KOH in anhyd. EtOH, and (c) 2N H<sub>2</sub>O. EtOH hot soln. of KOH. In a the saponification of I only occurred; in b saponification of I and Et-C(COOH)-COOEt occurred. With c the total content of esters can be detd. The compn. of the sample can be calcd. or read from the diagrams given. The accuracy of the method is ±2%.  
Z. Kuryka

DM 10/6

SEKOWSKA, Z.

SEKOWSKI, A.

Made in Poland, p. 457, (WIEDZA I ZYCIE, Vol. 21, No. 7, July 1954,  
Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 5  
May 1955, Uncl.

SEKOWSKI, Boleslaw

Studies on the germination of pollen grain of apple varieties. Prace i rozprawy z dziedziny rolnictwa i leśnictwa 18 no.2:97-127 1964.

1. Department of Forest Botany, College of Agriculture, Poznan.

TABEAU, Jerzy;SEKOWSKI, Ignacy

Comparison of electrocardiographic results with clinical examination  
in cardiovascular diseases. Polski tygod. lek. 12 no.25:957-959 17  
June 57.

1. Z I kliniki Chorob Wewnętrznych A. M. w Krakowie: Kierownik: prof.  
dr. Leon Tochowicz. Adres: Krakow, Bronowice Male ul. Przybyszewskiego  
36.

(CARDIOVASCULAR DISEASES, diagnosis,  
clin. methods, comparison with ECG (Pol))  
(ELECTROCARDIOGRAPHY,  
comparison with clin. diag. methods (Pol))



SEKOWSKI, Ignacy

Congenital defects of the heart with auricular communication. Polski tygod. lek. 14 no.40:1777-1786 5 Oct 59.

1. (Z I Kliniki Chorob Wewnetrznych A. M. w Krakowie; kierownik: prof. dr Leon Tochowicz i z Sully Hospital, Wielka Brytania; kierownicy: H. M. Foreman M.B.E., M.B., M.R.C.P., L.R., West M.B.E., M.B., M.R.C.P.)  
(HEART SEPTUM, abnorm.) (HEART DEFECTS CONGENITAL, compl.)

SEKOWSKI, K.

P O L .

Krzyszewski B., Sekowski K. Light Filters in Microphotography.  
„Zastosowanie filtrów świetlnych w mikrofotografii”. (Prace Inst.  
Odlewn. No. 1), Stalinogród, 1953, PWT, 7 pp., 21 figs., 3 tabs.

The authors describe the experiments performed by them with a view to determining the suitability of filters in metallography. Achromatic lenses fitted with yellow filters used in conjunction with orthochromatic plates will meet the purpose in ordinary laboratory practice, particularly when making microphotographs of the structure of ferro-alloys. Subtle microphotography, however, and particularly in the case of non-ferrous alloys, requires apochromatic lenses supplemented by a set of filters and used with panchromatic plates. The use of filters makes it possible to detect in the micro-image all details of interest to the metallurgist.

BB  
61

SEKOWSKI, K.

M102

689.35.5.74

Rutkowski K., Sekowski K. The Relations between Chemical Composition, Structure and Mechanical Properties of Low-Copper Manganese Brasses.

"Zależność między składem chemicznym, strukturą i własnościami mechanicznymi niskomiedziowych mosiądzów manganowych". (Prace Inst. Odlewn. No. 3), Warszawa, 1955, PWT, 12 pp., 21 figs., 9 tabs.

The possibility of limiting the use in copper alloys not only of deficit alloy components like Sn, Al, Be, Sb etc., but also of copper itself by the introduction of manganese brases having very high properties and a wide range of uses even with copper content not exceeding 45%. By a systematic investigation of the relations between chemical composition, structure and properties of alloys in the range of 40 + 50% Cu, 40 + 60% Zn and 0 + 10% Mn contents, the most valuable chemical composition, structure and properties of a number of alloys were established as regards economy (minimum Cu) and range of uses (maximum properties). Lines for the development of further investigations are suggested.

of

POLAND/Chemical Technology - Chemical Products and Their  
Application - Synthetic Polymers. Plastics.

H.

Abs Jour : Ref Zhur - Khimiya, No 9, 1958, 30316

Author : Sekowski, St.

Inst :

Title : 'Buna 32' A New Metal Binder.

Orig Pub : Wiedra i Zycie, 23, No 1, 33, 1956.

Abstract : A new butadiene base adhesive, 'Buna 32', has been developed in the German Peoples Republic for the bonding of metals (other than Cu) to other metals, to glass, and to ceramics by vulcanizing under low pressure at 110-150° for 10-15 min. The bonds are vibration-proof, resists temperatures of up to 120°, and have a strength of 60-170 kg/cm<sup>2</sup>.

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SEKOWSKI, K.

Apparatus for testing structures in elevated temperatures. (To be contd.)  
Biuletyn. p.8. (Przegląd Odlewnictwa, Vol. 7, No. 3, Mar 1957, Krakow,  
Poland)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 8, Aug 1957. Uncl.

SEKONCHI, K.

Apparatus for testing structures in elevated temperatures. (Conclusion)  
Biuletyn. 1. 11.

(PRZEMIAŁ OBIĘKNICTWA. Vol. 7, No. 5, May 1957. Warszawa, Poland)

SC: Monthly List of East European Accessions (SEAL) LC. Vol. 6, No. 10, October 1957. Uncl.

SALA, Tadeusz, mgr., inz.; KLUSKA, S., mgr., inz.; SEKOWSKI, Kazimierz,  
mgr., inz.

From the activities of the Foundry Institute. Przegl odlew  
11 no.10:17-20 Biul Inform '61.

SEKOWSKI, Kazimierz, mgr., inz.

Classification of phosphorus eutectic in gray cast iron. Przegl odlew  
12 no.3:78-83 Mr '62.



SEKOWSKI, Kazimierz

Influence of the cooling rate and chemical composition of  
gray cast iron on the structure and distribution of the  
phosphide eutectic. Prace inst odlew 12 no. 4: 263-291  
'67. [publ. '64].

SEKOWSKI, Kazimierz, mgr inż.

Microscopic observations of the commencement of gray castiron  
melting. Przegl odlew 12 no.11:337-341 N '62.

SEKOWSKI, Kazimierz, dr inż.

~~Correct preparation of metallographic specimens.~~ Przegl odlew  
13 no.4:117-121 Ap '63.

SEKOWSKI, Kazimierz, dr. inż.

Distribution of phosphorus eutectic educts in gray cast iron.  
Przegl odlew 13 no. 8/9: Suppl.: Biul inf Inst odlew  
13 no. 9/10: 17-19 '63.

1. Instytut Odlewnictwa, Krakow.

SEKOWSKI, Kazimierz, dr inż.

Phosphorus eutectic in low-chromium cast iron. Przegl odlew  
13 no.7:Suppl:Biul inf inst odlew 13 no.7/8:14-15 '63.

1. Instytut Odlewnictwa, Krakow.

SEKOWSKI, Kazimierz, dr inz.

Influence of the carbon, silicon, and phosphorus content in  
gray cast iron on the structure of phosphorous eutectic.  
Przegl odlewn 13 no. 11: Supplement: Biul inf inst odlew  
13 no. 11/12 24 '63.

SEKOWSKI, Kazimierz, dr inż.

Structure of phosphorous eutectic. Przegl odlew 13  
no. 5: Supplement: 13 no. 4/6: 9-11 '63.

SEKOWSKI, Kazimiers, dr inz.

Influence of the cooling rate of castings and the chemical composition of cast iron on the structure and distribution of phosphorus eutectic. Przegl mech 22 no.24:768 D'63.



SEKOWSKI, Kazimierz

Microsegregation of sulfides in gray cast iron. Przegl  
odlew 14 no. 1:5-9 Ja '64.

SEKOWSKI, Kazimierz

Microhardness measurements of cementite in cast iron. Przegl  
odlew 14 no.3:77-83 Mr'64

SEKOWSKI, Kazimierz

Cell-like structure of cast iron. Przegl odlew 14 no.5:137-  
142 My '64.

SEKOWSKI, Kazimierz

Concept of grain size in gray cast iron. Przegl odlew 14  
no.10:285-287 O '64.

SEKOWSKI, S.

SEKOWSKI, S; HULANICKI, A.

"WRiting chemical formulae." p. 24  
(Horyzonty Techniki, Vol 6 No 1 Jan 53 Warszawa)

SO: Monthly List of East European Accessions, Vol 2 No 9 Library of Congress Sept 53 Uncl

SEKOWSKI, S.

Sekowski, S.; Hulanicki. A.

"More about ions", p. 547 (Horyzonty Techniki, Vol. 6, no. 12, Dec. 1953. Warszawa)

Vol. 3, No. 3

SO: Monthly List of East European Accessions,/ Library of Congress, March 1954, Uncl.

SEKOWSKI, S.

Wizow produces sulfuric acid. p. 446, (WIEDZA I ZYCIE, Vol. 21, No. 7, July 1954  
Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 5  
May 1955, Uncl.

DEROGNI, S.

A few words about Philip Walter, an unknown Polish organic chemist. p. 177.  
CHEMIE, Katowice, Vol. 3, no. 6, June 1955.

SO: Monthly List of East European Accessions, (DEAL), LC, Vol. 4, no. 10, Oct. 1955,  
Uncl.



SELYUNOV, V. Ya.

"The Measurement of the Potentials of Agitation of Atoms of Quicksilver by Means of a Photometer," Dok. AN, 29, No. 1, 1940. Mbr., Central Roentgenological, Radiological & Oncological Inst. Khar'kov, -1940-. Mbr., Inst. Railway Matters, Kharkov, -1940-.

SELIGMAN, V. Ya.

"Extinction of Ultra-Violet Phosphorescence in Subtractive Colored NaCl Crystals,"  
Zhur. Eksper. i Teoret. Fiz., 11, No. 5, 1941. Mbr., Ukr. Central Roentgenological-  
Radiological, & Oncological Inst., Khar'kov, -1940-41-. Mbr., Inst. Railway Matters,  
Khar'kov, -1941-.

22(1)

SOV/3-59-5-23/34

AUTHOR: Selegenev, V. Ya., Candidate of Physico-Mathematical Sciences, Docent.

TITLE: How We Organize the Teaching of Physics

PERIODICAL: Vestnik vysshey shkoly, 1959, Nr 5, pp 77 - 78 (USSR)

ABSTRACT: For many years the physics course program of technical vuzes remained unaltered. However, the chairs of physics could not remain indifferent to the latest achievements of science and amended the programs as far as possible. Yet many problems important for the development of modern engineering were elucidated only in a concise and casual way. The Ministry's letter reference number "I - 100" entitled the vuzes to make corrections in the curriculum and this made it possible for the Khar'kov Institute of Railroad Engineers to work out detailed calendar plans, determine the material which

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SOV/3-59-5-23/34

### How We Organize the Teaching of Physics

the students must study independently, and to eliminate from the lectures subjects which had been learned in the secondary school. The chair prepared and multiplied a number of lectures on problems connected with the latest achievements in the field of physics which are dealt with in textbooks either superficially or not at all. Great attention is given to laboratory work for which 3 hours weekly are assigned. In the descriptions of laboratory tasks the theory of each work is expounded in detail and information is given on the technique of conducting the experiment. The work description is issued in the form of a handbook. Students who have not prepared themselves for laboratory work are not allowed to participate. Twenty-seven hours are assigned in each semester for laboratory work. During this time every student must fulfill not less than 8 to 9 assignments. Another

Card 2/3

SOV/3-59-5-23/34

How We Organize the Teaching of Physics

5 to 9 hours are used for seminar lessons during which it is examined whether the students have assimilated the theoretical material. The new program of the course in general physics for technical vuzes reflects both old and new problems, and is satisfactory in size and content. The author recommends that the Spetsial'noye konstruktorskoye byuro (Special Design Office) of the USSR Ministry of Higher Education examine the hand-made equipment of the physical laboratories, which is sometimes valuable and interesting, and that the manufacture of these non-standard articles be popularized.

ASSOCIATION: Khar'kovskiy institut inzhenerov zheleznodorozhnogo transporta imeni S.M. Kirova (Khar'kov Institut of Railroad Engineers imeni S.M. Kirov).

Card 5/5

FEDORENKO, Aleksandr Ivanovich; SELEGENEV, Vasiliy Yakovlevich;  
KHIZHNYAK, N.A., kand. fiz.-matem. nauk, dots., otv. red.;  
ALYAB'YEV, N.Z., red.

[Use of atomic energy in the national economy] Primenenie  
atomnoi energii v narodnom khoziaistve. Khar'kov, Izd-vo  
Khar'kovskogo univ., 1963. 166 p. (MIRA 17:8)

SELEGEY, M. V., TUROVSKAYA, F. M., ANIKEYEVA, G. N., GORYASHCHEKO, I. K.,  
RUSHAUM, D. G., STEPANOVA, Z. F., BASOVA, O. I., BALAKTIONOVA, N. S.,  
GERER, V. S., DENISOVA, G. M., ZEVDOCKIMOVA, YU. I., ZAKHAR'INA, M. A.,  
KORCHNAYA, R. A., LIVINA, I. V., MISHCHEKO, B. E., POPOVA, O. P.,

"Hygienic characteristics of the day regimen of Moscow  
school children.

report submitted at the 13th All-Union Congress of Hygienists,  
Epidemiologists and Infectionists, 1959.

SELEKH, M. A.

Selekh, M. A. "On changes in the build of red steppe cattle in connection with the rearing of calves," Trudy Dnepropetr. s. -kh. in-ta, Vol. II-III, 1948, p. 77-89,  
- Bibliog: 11 items.

SO: U-3261, 10 April 53, (Letopis 'zhurnal 'nykh Statey, No1.12, 1949)



SAIBKI, E. A.

Swine breeding

Some data on intervarietal crossing of swine. Trudy Dnepr. sel'khoz. inst. No. 4, '51.

Monthly List of Russian Accessions, Library of Congress  
June 1953. UOL.

1. SELEKH, M. A.: PSHENICHNAYA, A. D.
2. USSR (600)
4. Dnepropetrovsk Province - Calves
7. Practice of leading farmers in raising calves on the collective farms of Dnepropetrovsk Province. Sots.zhiv, .5, no. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, \_\_\_\_\_ April \_\_\_\_\_ 1953, Uncl.

ABRAMOV, A.S.; MENDEL'SON, V.S.; FREYDIN, G.Yu.; POGOREL'SKIY, M.A.;  
BOBKOV, L.I.; SELEKH, V.F.

Designing die casting molds for diamond tools. Mashinostroitel'  
no.11:30-32 N '64 (MIRA 18:2)

CHEKHOVANNIK, A.Ya., inzh.; SELEKHOV, P.M., red.; BOBAKOV, A.N.,  
red.

[Technological equipment for confectionery enterprises;  
catalog-handbook] Tekhnologicheskoe oborudovanie pred-  
priiatii konditerskoi promyshlennosti; katalog-spravochnik.  
Moskva, TsINTIAM. 1964. 106 p. (MIRA 18:7)

ZUYKOV, V.Ya.; IVANOV, A.M.; KRISTALL, Z.B.; MAKSIMOVA, N.K.; NOVIKOV, O.P.; POTKOV, G.A.; KRIKUNOV, A.Ye., red.; SELEKHOV, P.M., red.; SHUVALOVA, N.S., red.; ZORINA, G.V., red.; VINOGRADOV, Ye.A., tekhn. red.

[Liquid separators for the food industry; handbook-catalog]Separatory zhidkostnye dlia pishchevoi proryshlennosti; katalog-spravochnik. Moskva, 1962. 86 p. (MIRA 15:10)

1. Moscow. Tsentral'nyy institut nauchno-tekhnicheskoy informatsii mashinostroyeniya. 2. Vsesoyuznyy nauchno-issledovatel'skiy i eksperimental'no-konstruktorskiy institut prodovol'stvennogo mashinostroyeniya (for Zuykov, Ivanov, Kristall, Maksimova, Novikov, Potkov).

(Separators (Machines))

KOVALENKO, N.A.; TOMBAYEV, N.I.; KRIKUNOVA, A.Ye., red.; SELEKHOVA, P.M.,  
~~red.~~; ~~SELEKHOVA, N.S., red.~~; ZORINA, G.V., red.; ~~VINOGRADOV, Ye.A.,~~  
tekh. red.

[Catalog; technical equipment of dairy industry enterprises]  
Katalog; tekhnologicheskoe oborudovanie predpriatii moloch-  
noi promyshlennosti. Moskva, 1962. 123 p. (MIRA 15:11)

1. Moscow. Tsentral'nyy institut nauchno-tekhnicheskoy infor-  
matsii mashinostroyeniya. 2. Vsesoyuznyy nauchno-issledovatel'-  
skiy i eksperimental'no-konstruktorskiy institut prodovol'-  
stvennogo mashinostroyeniya (for Kovalenko, Tombayev).  
(Dairy industry—Equipment and supplies)

CHERNOMIVANNIK, A.Ya., inzh.; BOBAKOV, A.N., red.; SELEKHOV, P.M.,  
red.; SHUVAILOVA, N.S., nauchn. red.

[Technological equipment for confectionaries; catalog and  
handbook] Tekhnologicheskoe oborudovanie predpriatii kon-  
ditorskoi promyshlennosti; katalog-spravochnik. Moskva,  
TSintiam. Pt.1-2. 1963.

VERBEV, P.; ZHELIAZKOV, S.; GUBEV, E.; SELEKTAR, A.

Influenza in Sofia in 1957. Nauch. tr. vissh. med. inst. Sofia 40 no.2:  
121-138 '61.

1. Predstavena ot prof. P. Verbev, rukovoditel na Katedrata po epidemiologia i infeksiozni bolesti.

(INFLUENZA epidemiol)



VERBEV, P.; TANEV, I.; ZHELIAZKOV, S.; SHTEREV, P.; SELEKTAR, A.; KHAITOV, A.

Epidemiological role of various conditions and duration of hospitalization in the treatment of scarlet fever. Nauch. tr. vissh. med. inst. Sofia 40 no.2:139-153 '61.

1. Predstavena ot prof. P. Verbev, rukovoditel na Katedrata po epidemiologiia i infektsiozni bolesti.

(SCARLET FEVER ther)

SELEKTOR, S., inzh.

Mining geology. Znan.ta pratsia no.12:14-15 D '59.  
(MIRA 13:4)

1. Rudnik im. XX parts'yezda, Krivoy Rog.  
(Mining geology)

SELEKTOR, S.M.

Some methods for increasing the effectiveness of prospecting operations. Razved.i okh.nedr 23 no.3:61-63 Mr '57. (MLRA 10:5)

1. Rudoupravleniye in. Kaganovicha.  
(Boring) (Prospecting)

KITYK, V.I.; CHERNIKOVA, Z.A.; SELEKTOR, S.M.

Reviews and bibliography. Geol. zhur. 25 no.2:108-112 '65.

(MIRA 18:6)

1. Institut geologii i geokhimiï goryuchikh iskopayemykh AN UkrSSR.  
(for Kityk).
2. Moldavskoye geologicheskoye upravleniye (for  
Chernikova).
3. Tsentral'nyy gornoobogatitel'nyy kombinat  
(for Selektor).

VERBEV, P.Yo.; PODVARZACHEVA, A.; YEFREMOVA, A.; GYBEV, Ye.; IVANOV, N.;  
SELEKTAR, A.; KILIMOVA, Ye.; STAYKOVA, A.; KRYSTEV, T.

Studies on epidemiological and clinical aspects of epidemic hepatitis  
in Bulgaria. Zhur.mikrobiol.epid.i immun. 31 no.9:96-101 S '60.  
(MIRA 13:11)

(BULGARIA--HEPATITIS, INFECTIOUS)

SELEKTOR, S.M.

Ore losses caused by incomplete contouring. Razved. i okh. nedr  
27 no.12:30-34 D '61. (MIRA 15:3)

1. Krivorozhskiy tsentral'nyy gornoobogatitel'nyy kombinat.  
(Krivoy Rog Basin--Iron mines and mining)

BELILOVSKIY, Yefim Solomonovich; BOGUSLAVSKIY, Eduard Yelizarovich;  
BINUS, Mark Semenovich; VOLODIN, Aleksey Pavlovich; KUNIN,  
Iziaslav Kopelovich, SELEKTOR, Spartak Mikhaylovich; CHUB,  
Vasiliy Fedoseyevich; YAMKOVY, Grigoriy Tikhonovich; DMITRIYEV,  
A.P., otv. red.; KOVAL', I.V., red. izd-va; MAKSIMOVA, V.V., tekhn. red.

[Improvement of underground mining methods and equipment in the  
Krivoy Rog Basin] Sovershenstvovanie tekhniki i tekhnologii pod-  
zemnoi dobychi rudy v Krivorozhskom basseine. [By] E.S. Belilov-  
skii i dr. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po gornomu  
delu, 1961. 238 p. (MIRA 15:3)

(Krivoy Rog Basin--Iron mines and mining)  
(Automatic control)

SELEKTOR, S.M.

Space and age relation between the diabase dikes and ore occurrences in the Saksagan' and Yuzhnyy ore deposits of the Krivoy Rog Basin. Sov. geol. 4 no.8:115-118 Ag '61.  
(MIRA 16:7)

1. Krivorozhskiy tsentral'nyy gornoobogatitel'nyy kombinat.  
(Krivoy Rog Basin—Ore deposits)



SELEKTOR, Spartak Mikhaylovich

[Operational prospecting and some problems of the ore geology of the Krivoy Rog iron ore deposits] Ekspluatatsionnaia razvedka i nekotorye voprosy rudnichnoi geologii zhelezorudnykh mestorozhdenii Krivogo Roga. Moskva, Gosgeoltekhizdat, 1963. 138 p. (MIRA 17:5)

SELEKTOR, Ya.M.

USSR/ Nuclear Physics - Proton dispersion

Card 1/1 Pub. 22 - 22-65

Authors : Selector , Ya.M.; Nikitin, S. Ya.; Bogomolov, E.G.; and Zombkovskiy, S.M.

Title : ~~Dispersed protons with protons of 460-560-660 Mev of energy~~  
Dispersion of protons with protons of 460-560-660 Mev of energy

Periodical : Dok. AN SSSR 99/6, 967-970, Dec 21, 1954

Abstract : Experiments were conducted with proton dispersion by protons of 460, 560, and 660 Mev of energy. The phasetron of the Institute of Nuclear Problems was used as a proton generator. Proportional counters and a plain counter were used as proton registering devices. Paraffine and carbon discs were used as a diffuser and a carbon controlling diffuser, respectively. The experimental set-up and the equipment is described. The results obtained are presented in the form of graphs. Eight references; 1-USSR (1950-1954). Diagrams; graph.

Institution: .....

Presented by: Academician A.I. Alikhanov, November 4, 1954

SOL. UR, G.M.

"Scattering of Protons With Energies of 460-660 Mev by Protons." Cand Phys-Math  
Sci, Acad Sci USSR, Moscow, 1955. Vol. No 17, Apr 55)

CC: Sol. UR, 2 Nov 55 - Survey of Scientific and Technical Dissertations  
Deposited at USSR Higher Educational Institutions (10)

SELEKTOR, Ya-M.

1001-Rm

1972

THE SCATTERING OF PROTONS WITH ENERGIES 460-660 MEV ON PROTONS. S. Ya Nikitin, Ya M. Selector, E. G. Bogomolov, and S. M. Zombkouski (Academy of Sciences of the U.S.S.R., Moscow). Nuovo cimento (10) 2, 1269-81 (1955) Dec. (in English)

(p-p) scattering is studied with protons obtained from the synchrocyclotron of the Institute for Nuclear Problems of the Academy of Sciences of the USSR. The scattering cross section and the angular distribution have been measured

in the interval of energies from 460 up to 660 Mev. The results show that practically up to proton energies of 460 Mev the scattering cross section is isotropic, in the interval 560 to 660 Mev it is markedly anisotropic. A discussion of the results obtained is given. (auth)

Em

SELEKTOR, Ya. M.

Scattering of protons by protons of 460-660 m.e.v. energy. S. Ya. Nikitin, Ya. M. Selektor, E. G. Bogomolov, and S. M. Zombkovskii. *Dokl. Akad. Sci. U.S.S.R.* 19, 603-14 (1955) (Engl. translation).—See C.A. 50, 7615i.

B. M. R.

SELEKTOR, YA-M.

1982  
SCATTERING OF PROTONS BY PROTONS AT 460 TO 660  
MEV. S. Ya. Nikitin, Ya. M. Selektor, E. G. Bogomolov,  
and S. M. Zombkovskii. Izvest. Akad. Nauk S.S.S.R. Ser.  
Fiz. 19, 561-72(1955) Sept.-Oct. (In Russian)

Investigations of p-p scattering were carried out with the  
synchrocyclotron of the Inst. of Nuclear Problems. Protons  
of 460 and 660 Mev were obtained directly from the accel-  
erator; protons of 560 Mev were obtained by retarding the  
660-Mev protons in the graphite filters. (R.V.J.)

mw  
Sci

rmc  
Sci

Fig-rem2

CHERNYKH, Y.M., DUBINSKIY, I.S., GABOVINSKIY, G.K. and LINTSEY, S.Y.

Elastic small angle scattering of 660 MeV protons  
by protons (II/59)

CEA-Symposium on High Energy Accelerators and Pion  
Physics.

Geneva, 11-23 June 56  
In. Branch #5

SELEKTOR, Ya. M., BOGOMOLOV, E.G., ZOMBKOVSKIY, S.M., NIKITIN, S. Ya.

"Elastic Scattering of Protons with an Energy of 660 MeV by Protons at Small Angles," paper presented at CERN Symposium, 1956, appearing in Nuclear Instruments, No. 1, pp. 21-30, 1957



pa

*Selektor, Ya. M.*

81931  
S/120/60/000/03/006/055  
E032/E514

24.6810

AUTHORS: Selektor, Ya. M., Aynutdinov, M.S. and Zombkovskiy, S.M.  
TITLE: A Device for Measuring the Pressure and the Level of  
Hydrogen in Liquid Hydrogen Bubble Chambers 19

PERIODICAL: Pribery i tekhnika eksperimenta, 1960, No 3, pp 29-31  
ABSTRACT: A description is given of an instrument which can be used to measure the pressure and sudden pressure changes in bubble chambers. The sensitive element is a capacitor. Changes in the pressure lead to changes in the capacitance, and the present paper consists essentially of a description of an electronic circuit which can be used to measure these small changes in the capacitance. The circuit is shown in Fig 1. The working frequency is 200 kc/s. The change in the capacitance is converted into a phase change and this is measured by the circuit. A 40 m cable connects the capacitance probe to the control unit. Steps are taken to compensate changes in the cable capacitance. A sensitivity of 0.5 - 10  $\mu\text{F}$  per full scale deflection can easily be obtained. The zero drift does not exceed

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S/120/60/000/03/006/055  
E032/E514

A Device for Measuring the Pressure and the Level of Hydrogen  
in Liquid Hydrogen Bubble Chambers

1% of full scale per hour. The instrument can also be used to measure the level of liquid hydrogen and liquid nitrogen in closed metallic containers. In the latter cases use is made of the fact that there is a relatively large difference between the dielectric constant of hydrogen in the vapour and liquid states. In the circuit shown in Fig 1, the alternating voltage from the 200 kc/s oscillator  $\mathcal{N}_5$  is applied through the cathode follower  $\mathcal{N}_4$  to the grid of the amplifier  $\mathcal{N}_1$ . The probe unit is connected to the anode of  $\mathcal{N}_1$  through the long high-frequency cable  $K_1$ . The phase shift at the anode of  $\mathcal{N}_1$  is determined by the difference between the oscillator frequency and the resonant frequency of the circuit  $R_1, L_1, C_1, C$ . The carrier frequency from the oscillator and the phase-shifted oscillations from the anode of  $\mathcal{N}_1$  are applied to the phase detector  $\mathcal{N}_2, \mathcal{N}_3, \mathcal{A}_1$  and  $\mathcal{A}_2$ . The output of the phase detector can be connected either to a pointer instrument or a CRO. There is 1 figure.

Card 2/2

SUBMITTED: May 23, 1959

44

S/120/61/000/001/009/062  
E032/E114

AUTHORS: Aynutdinov, M.S., Zombkovskiy, S.M., Nikitin, S.Ya.,  
and Selektor, Ya.M.

TITLE: A 25 cm Diameter Liquid Hydrogen Bubble Chamber

PERIODICAL: Priory i tekhnika eksperimenta, 1961, <sup>6</sup>No.1, pp.35-39

TEXT: A description is given of a liquid hydrogen bubble chamber having a working diameter of 25 cm and a depth of 10 cm. The chamber is operated in a constant magnetic field of 14000 oe (5% uniformity over working region). The expansion is carried out by means of stainless steel bellows, 10 cm in diameter. About 12 litres of liquid hydrogen are necessary in order to cool the chamber from the liquid nitrogen temperature to the liquid hydrogen temperature. The time necessary to cool the chamber from room temperature down to 20 °K is about 24 hours, and under dynamic conditions (expansion after each 14 sec) the liquid hydrogen consumption is 2 to 2.5 litres/hour. The upper and lower pressure on expansion is 5.5 and 1.5 atm respectively. The corresponding temperature of the chamber and the hydrogen bath is 27 °K and 26.5 °K. respectively.

Card 1/2

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S/120/61/000/001/009/062  
E032/E114

A 25 cm Diameter Liquid Hydrogen Bubble Chamber

The bubble chamber has been used in the  $\pi$ -meson beam of the 7 GeV machine of the Joint Institute of Nuclear Studies, (Ob'yedinennyy institut yadernykh issledovaniy). A detailed sectional drawing of the device is given.

Acknowledgements are expressed to V.A. Beketov and A.P. Besschetniy for developing parts of the chamber and to V.T. Smolyankin and A.A. Sokolov for valuable advice.

There are 4 figures and 4 references: 1 Soviet and 3 non-Soviet.

SUBMITTED: February 5, 1960

Card 2/2

S/120/61/000/001/056/062  
EO32/E114

AUTHORS: Beketov, V.A., Selektor, Ya.M., Zombkovskiy, S.M.,  
and Aynutdinov, M.S.

TITLE: Vacuum-Tight Glass Windows for Liquid Hydrogen  
Bubble Chambers

PERIODICAL: Pribery i tekhnika eksperimenta, 1961<sup>6</sup>, No.1, pp.182-183

TEXT: One of the most difficult problems in the design of liquid hydrogen bubble chambers is to produce a reliable vacuum-tight union between the body of the chamber and the glass windows through which the working volume is photographed and illuminated. Existing designs (D. Parmentier Jr., A.J. Schwemin, Ref.1, and V.Z. Kolganov et al. Ref.2) are said to be either unreliable for chamber diameters in excess of 25 cm, or require replacement of the sealing elements after one or two successive working cycles. The present authors have used the design shown in the figure. The copper gasket 1 is inserted into a groove in the body of the chamber and is in contact with the teflon ring 2. In the upper part of the copper gasket there is a rectangular groove carrying a further teflon ring 3. When the arrangement is compressed by

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S/120/61/000/001/056/062  
E032/E114

Vacuum-Tight Glass Windows for Liquid Hydrogen Bubble Chambers

the brass bolts the copper gasket is squashed and the teflon rings provide the vacuum-tight seal. In order to achieve a uniform transmission of pressure to the glass a further copper gasket 4 is placed between the glass and the flange 7. The copper gasket 1 was 3.1 mm wide and 7.5 mm high. The width and height of the teflon ring 3 were 1 and 1.8 mm respectively. Glass windows up to 40-50 cm in diameter can be produced in this way. There are 1 figure and 2 references: 1 Soviet and 1 non-Soviet.

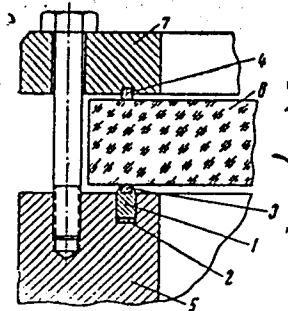
SUBMITTED: December 10, 1959

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S/120/61/000/001/056/062  
EO32/E114

Vacuum-Tight Glass Windows for Liquid Hydrogen Bubble Chambers

Figure



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SELEKTOR, YA. M.

8/089/62/013/006/019/027  
B102/B186

AUTHORS: G. T. and M. R.

TITLE: Nauchnaya konferentsiya Moskovskogo inzhenerno-fizicheskogo  
instituta (Scientific Conference of the Moscow Engineering  
Physics Institute) 1962

PERIODICAL: Atomnaya energiya, v. 13, no. 6, 1962, 603 - 606

TEXT: The annual conference took place in May 1962 with more than 400  
delegates participating. A review is given of these lectures that are  
assumed to be of interest for the readers of Atomnaya energiya. They are  
following: A. I. Leypunskiy, future of fast reactors; A. A. Vasil'yev,  
design of accelerators for superhigh energies; I. Ya. Pomeranchuk,  
analyticity, unitarity, and asymptotic behavior of strong interactions at  
high energies; A. B. Migdal, phenomenological theory for the many-body  
problem; Yu. D. Fivyskiy, deceleration of medium-energy antiprotons in  
matter; Yu. M. Kogan, Ya. A. Iosilevskiy, theory of the Mössbauer effect;  
M. I. Byasanov, theory of ionization losses in nonhomogeneous medium;  
Yu. B. Ivanov, A. A. Rukhadse, h-f conductivity of subcritical plasma;

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Nauchnaya konferentsiya...

S/089/62/013/006/019/027  
B102/B186

Ye. Ye. Lovetskiy, A. A. Rukhadze, electromagnetic waves in nonhomogeneous plasma; Yu. D. Kotov, I. L. Rozental', the origin of fast cosmic muons; Yu. M. Ivanov, muon depolarization in solids; V. G. Varlamov, Yu. M. Grashin, B. A. Dolgoshein, V. G. Kirillov-Ugryumov, V. S. Roganov, A. V. Samoylov,  $\mu^-$  capture by various nuclei; V. S. Demidov, V. G. Kirillov-Ugryumov, A. K. Ponomov, V. P. Protasov, F. M. Sergeyev, scattering of  $\pi^-$  mesons at 5 - 15 Mev in a propane bubble chamber; S. Ya. Nikitin, M. S. Aynutdinov, Ya. M. Selektor, S. M. Zombkovskiy, A. P. Grashin, muon production in  $\pi^+p$  interactions; B. A. Dolgoshein, spark chambers; N. G. Volkov, V. K. Lyapidevskiy, I. M. Obodovskiy, study of operation of a convection chamber; K. G. Finogenov, production of square voltage pulses of high amplitudes; G. N. Aleksakov, problems of color vision; V. K. Lyapidevskiy, relation between number of receivers and number of independent colors; Ye. M. Kudryavtsev, N. N. Sobolev, N. I. Tizengauzen, L. N. Tunitskiy, P. S. Payzulov, determination of the moment of electron transition of oscillator forces and the widths of the Schumann-Runge bands of molecular oxygen; B. Ye. Gavrilov, A. V. Zharikov, V. I. Rayko, decomposition of the volume charge of intense ion beams; Ye. A. Kramer-Ageyev, V. S. Troshin, measurement of neutron spectra; G. G. Doroshenko, new methods of fast-neutron recording; V. I. Ivanov, dosimetry terminology; R. M. Voronkov, Card 2/4

AYNUTDINOV, M.S.; ZOMBKOVSKIY, S.M.; NIKITIN, S.Ya.; SELEKTRO, Ya.M.;  
GRASHIN, A.F.

On  $\pi\pi$ -interaction in  $\pi$ -p-collisions at an energy of 7.2 Bev.  
Zhur. eksp. i teor. fiz. 42 no.5:1413-1415 My '62.

(MIRA 15:9)

1. Institut teoreticheskoy i eksperimental'noy fiziki.  
(Mesons) (Collisions (Nuclear physics))

S/056/62/042/006/014/047  
B104/B102

AUTHORS: Aynutdinov, M. S., Zombkovskiy, S. M., Nikitin, S. Ya.,  
Selektor, Ya. M.

TITLE: The elastic scattering of 7.2-Bev  $\pi^-$  mesons by protons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42,  
no. 6, 1962, 1495-1498

TEXT: The elastic scattering of the mesons was measured in a liquid-hydrogen bubble chamber (25 cm diameter) placed in a magnetic field of 13.5 koe. The chamber was exposed to a beam of external  $\pi^-$  mesons from the proton-synchrotron of the Ob'yedinennyi institut yadernykh issledovaniy (Joint Institute of Nuclear Research). The meson beam was produced in an internal beryllium target, focussed by four quadrupole lenses, analyzed by the magnetic field according to the momentum, and directed to the entrance of the bubble chamber. The meson energy had a Gaussian distribution with a half-width of 0.8 Bev. From 10 to 25 mesons were recorded for each expansion. From 13,700 photographs, 1619 events of  $\pi p$  interactions were found; whereof 192 were identified as

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The elastic scattering of ...

S/056/62/042/006/014/047  
B104/B102

elastic scattering events. The differential cross section of the elastic  $\pi^-p$  scattering was determined for angles between 4 and  $28.3^\circ$  in the c.m.s. (Fig. 2). The scattering amplitude was calculated for

$R = 1.02 \cdot 10^{-13}$  cm,  $K = 0.70 \cdot 10^{23}$  cm $^{-1}$ ,  $k_1 = 0$ , and  $\sigma_{\text{diff}} = 4.84$  millibarn with the help of

$$f(0) = ik_0 \int_0^R (1 - \exp(-K + 2ik_1 \sqrt{R^2 - \rho^2})) J(k_0 \rho \sin \theta) \rho d\rho.$$

Here  $k_0$  is the wave number of the primary pion,  $k_1$  is the change in the real part of the wave number, and  $K$  is the absorption coefficient.

$\sigma_{\text{abs}} = 31 \pm 3.1$  mb;  $\sigma_{\text{el}}(\theta' \geq 5^\circ) = 3.90 \pm 0.54$  mb;  $\sigma_{\text{el}}(\theta^0) = 39.2$  mb/steradian. The results can be expressed very well in terms of the optical model of a proton ( $\sigma_{\text{opt}}(\theta^0) = 33.5$  mb/steradian). There are 2 figures.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki Akademii nauk SSSR (Institute of Theoretical and Experimental Physics of the Academy of Sciences USSR)

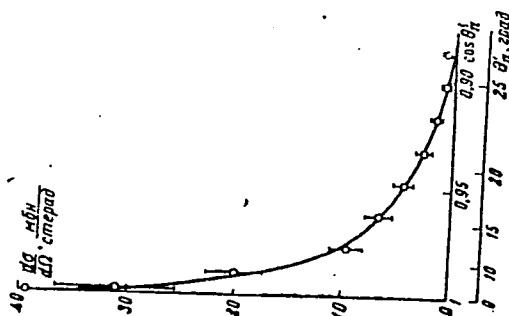
Card 2/3

The elastic scattering of ...

S/056/62/042/006/014/047  
B104/B102

SUBMITTED: January 30, 1962

Fig. 2. Angular dependence of the elastic scattering cross section.



Card 3/3

AYNUTDINOV, H. S.; NIKITIN, S. Ya.; SELEKTOR, Ya. M.; ZOMDKOVSKY, S. M.

"Investigation of Resonance States in  $\pi^+ - \text{Meson Systems}$ ."

Report presented at the Int. Conference on High Energy  
Physics, Geneva, 4-11 July 1962

*SELEKTOR, M.M.*

24.6700

37893

S/056/62/042/005/044/050  
B108/B138

AUTHORS: Aynutdinov, M. S., Zombkovskiy, S. M., Nikitin, S. Ya.,  
Selektor, Ya. M., Grashin, A. F.

TITLE:  $\pi$ - $\pi$  interaction in  $\pi^-$ -p collisions at 7.2 Bev

PERIODICAL: Zhurnal' eksperimental'noy i teoreticheskoy fiziki, v. 42,  
no. 5, 1962, 1413-1415

TEXT: In order to collect information on pion multiple production the authors studied 7.2-Bev  $\pi^-$ -p collisions using a liquid hydrogen chamber in a magnetic field. The distribution of  $\pi^- + p \rightarrow p + \pi^- + k\pi^0$  events according to the square of the pion total energy  $\omega$  has a narrow peak at  $\omega^2 \sim 30$ . This is attributed to participation of spin 1  $\rho$ -mesons in the reaction  $\pi^- + p \rightarrow p + \rho^- \rightarrow p + \pi^- + \pi^0$ . The production cross section of  $\rho^-$ -mesons is  $\sim 1$  mbarn. The scattering cross section  $\sigma_{\pi\pi}$  for primary momenta of 2.8 Bev/c is about  $300 \pm 100$  mbarn for  $\omega^2 = 20-30$ . There are 2 figures.

Card 1/2

$\pi$ - $\pi$  interaction in...

S/056/62/042/005/044/050  
B108/B138

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki (Institute  
of Theoretical and Experimental Physics) f.

SUBMITTED: March 5, 1962

Card 2/2



S/056/62/043/004/055/061  
B104/B186

AUTHORS: Agnautdinov, M. S., Zombkovskiy, S. M., Nikitin, S. Ya.,  
Selektor, Ya. M., Shulyachenko, V. N.

TITLE:  $\pi\pi$ -interaction during multiple pion production in  
 $\pi p$ -collisions

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,  
no. 4(10), 1962, 1543-1546

TEXT:  $\pi\pi$ -interaction was studied on 7.2 Bev primary  $\pi^-$ -mesons whose  
velocity distribution was Gaussian with a half width of 0.8 Bev.  
13,000 photographs were taken from a 25 cm wide liquid-hydrogen bubble  
chamber placed in a magnetic field of 13,500 gauss. The reactions

$$\pi^- + p \rightarrow 2\pi^- + 2\pi^+ + n + k\pi^0, \quad (1)$$

$$\pi^- + p \rightarrow 3\pi^- + 3\pi^+ + n + k\pi^0, \quad (2)$$

were studied.  $k$  is the known number of  $\pi^0$ -mesons. The reactions

Card 1/2

S/056/62/043/004/055/061  
3104/3186

$\pi\pi$ -interaction during multiple ...

$$\begin{aligned}\pi^- + p &\rightarrow 2\pi^- + \pi^+ + p + k\pi^0, & (3) \\ \pi^- + p &\rightarrow 3\pi^- + 2\pi^+ + p + k\pi^0 & (4)\end{aligned}$$

were excluded by identifying the protons from their momenta and by estimating the ionization. The numbers of possible combinations

( $\pi^-\pi^-$ ,  $\pi^+\pi^+$ ,  $\pi^+\pi^-$ ,  $\pi^-\pi^0$ ) as functions of the effective masses have sharp maxima at the mass values of 0.33, 0.44, 0.56, 0.76, 0.99. Evidently, there are resonances at these mass values in the systems with two pions. It is proved that one and the same pion is not involved in two maxima. It is concluded that in systems with equal mass values, but with different isotopic spins and mechanical spins, there exist two resonance systems. This means that in the case of strong interaction there is a degeneracy with respect to the two spins. There are 2 figures and 1 table.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki Akademii nauk SSSR (Institute of Theoretical and Experimental Physics of the Academy of Sciences USSR)

SUBMITTED: June 20, 1962

Card 2/2

S/056/63/044/002/004/065  
B102/B186

AUTHORS: Aynutdinov, M. S., Zombkovskiy, S. M., Nikitin, S. Ya.,  
Selektor, Ya. M., Shulyachenko, V. N.

TITLE: Multiple production of pions in 7.2 Bev  $\pi^-p$  collisions

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44,  
no. 2, 1963, 413-420

TEXT: The authors here continue previous investigations (ZhETF, 1543, 1961) in which they had shown that the resonances observed in inelastic  $\pi p$  collisions (cf. e.g. Phys. Rev. Lett., 6, 624, 628, 1961) play an important part in multiple pion production. Now the angular and momentum distributions of pions and protons are investigated for inelastic  $\pi p$  interactions of various multiplicities. The resonances arising in three- and four-pion systems are also studied, and the results are compared with the statistical theory. The measurements were made in a liquid-hydrogen bubble chamber positioned in a magnetic field of 13.5 koe. The  $\pi^-$  beam was obtained from the inner Be target of a proton synchrotron. The mean beam energy was 7.2 Bev, the  $\pi^-$  momentum distribution was Gaussian with a

Card 1/2

Multiple production of pions ...

S/056/63/044/002/004/065  
B102/B166

spread of  $\approx \pm 0.8$  Bev/c. A total of 13,000 emulsion plates were scanned, and among 1590  $\pi p$  interaction events found, there were 192 elastic ones. The mean multiplicity was  $\approx 3.6$ , i.e. there were 2-, 4-, 6- and 8-pronged stars with a percentage of 36.6, 40.3, 13.2, and 0.8%, respectively; the cross-sections were 10.0, 13.5, 3.6, and 0.2 mb. The total cross-section was  $\sigma_{\text{tot}} = 31.0 \pm 3.1$  mb, and  $\sigma_{\text{el}} = 3.90 \pm 0.54$ ,  $\sigma_{\text{inel}} = 27.1 \pm 0.3$  mb.

For 2-, 4-, and 6-pronged stars in the c.m.s. the proton momentum distributions differ greatly, whereas the proton angular distributions and the  $\pi$ -meson distributions are more similar. The  $\pi$ -resonances arising in multiple pion production play the main role. It is assumed that in this process resonance states of three or four pions are formed, which decay into lower ones or pions. This is verified in determination of the effective masses of all possible combinations of charged pions for four-pronged stars and in an investigation of the existence of bound states with energies above 1 Bev. There are 12 figures and 2 tables.

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